

Customer Case Study



JAPANESE RED CROSS ASAHIKAWA HOSPITAL

Leading Red Cross Hospital

For 100 years Asahikawa Red Cross Hospital has been a regional medical support hospital responsible for acute care in North Japan. It has been responsible for highly specialized medical treatment such as cancer, lifestyle disease prevention, nursing care support and remote medical care etc.

It is North Japan's core hospital, which covers the needs from highly specialized medical care to life-saving emergency medical care. It has a historic A & E centre, as well as a specialist brain surgery hospital, which is known for its cerebrovascular care.

OBJECTIVES

- Strengthen emergency medical care by ambulance helicopter covering northern area of Hokkaido.
- Implementation of Smart-telecaster to use real-time video sharing between the doctor on-site and the base hospital.

AIMS

1. Easy introduction though a body-worn camera with compatible, high quality image resolution
2. Flexibility of operation which can use satellite mobile phone signals, even in a poor mobile phone reception area
3. Expecting improvement of patient's treatment and results, by initiating treatment earlier and through improved cooperation and communication between doctors on the scene and in the hospital.

GOALS

Aiming to improve life-saving rate through earlier diagnosis, starting treatment earlier and selecting the most suitable hospital based on the patient's condition and location.

The Asahikawa Red Cross Hospital is a core hospital that provides advanced acute care and specialized medical care. It plays a key role as a regional medical support hospital in the Hokkaido area. The emergency medical centre opened in 1978 and has the oldest history in Hokkaido.

In addition, the Asahikawa Red Cross Hospital is responsible for the mission as a base hospital that operates the only doctor helicopter system in the northern area.

Asahikawa Red Cross Hospital Deputy Director Mr Tsuyoshi Sumida explains: *"The doctor flies in a helicopter, which is equipped with emergency medical equipment. They respond to requests from either a fire fighting call out or a medical call out. The doctor and nurse quickly dispatch to the accident, sudden illness or disaster site. Their speed of transportations allows them to perform life saving measures, before transporting the patient to a medical institution. It is possible to shorten the transportation time and start treatment earlier. We aim to improve the number of lives we can save."*



Using the doctor's helicopter offers several benefits. The first is to dispatch physicians and nurses to emergency situations as soon as possible to initiate initial early treatment. The helicopter increases the speed of reaching the patients especially to remote islands.

The flight doctor and nurse can operate in the helicopter whilst a remote Medical Control Doctor (MC Dr) can advise from back at the hospital and instruct medical practice. Together they can speed up diagnosis, treatment, collaboration and share information. They can then continue medical treatment during transportation. This maximizes life-saving effects, alleviates discomfort and quickens diagnosis.

Doctors are given remote assistance by assessing the situation through live-streaming from the incident.

In the past, the doctor's helicopter would arrive at the scene. Only after the doctor flight doctor and nurse carried out medical treatment to the patient, would they report the status verbally to the remote MC Doctor by mobile phone or from the helicopter radio. Ideally flight doctors and MC Doctor would share diagnosis and treatment from the incident, but up until now, there has been a time lag in order to share information. This led to a delay in preparing the receiving hospitals to receive the patient. It was also difficult to maintain an objective evaluation or be clear of the level of severity through verbal communication.

There could also be added complications in transporting the patient. For example, if the rescue and emergency centre in the Asahikawa medical zone was full, there could be cases where emergency transportation was sought in the Sapporo medical zone or the Obihiro medical zone. More accurate information on real-time availability was required.

Furthermore, in the case of severe injury or illness (such as amputation of limbs or environmental hazards), it would be wiser to transport the patient to a medical institution equipped with the right specialized medical professionals. It was becoming more important to judge whether to transfer patient to a different location, and if the patient was well enough to make a different journey. In the past, the patient's injury or illness condition was photographed by mobile phone and sent by e-mail, but a more efficient method was sought, without requiring too much time and effort.

Mr Sumida's attention was focussed on the utilization of a video broadcasting system that can transmit video footage in real time. Soliton's streaming products provide reliability, good quality pictures and low latency when compared to alternative solutions. Soliton does not rely on a single telecom operator and mitigates risk by using multiple 4G connections simultaneously when sending video. If the state of the patient can be confirmed with video images, with added contextual viewing of the surrounding area of the patient, it is possible to objectively and quickly evaluate and diagnose what kind of treatment or preparation is required in the hospital. Furthermore, with video streaming the MC Dr can provide appropriate instructions and support by collaborating with the flight doctor or nurse during treatment.

STC-Cam accurately grasps the condition of the patient.

As a result of demonstrating multiple products, the range of features combined with the high quality video transmission of Soliton Systems' Smart-telecaster attracted attention. Smart-telecaster also uses the iPhone STC-Cam app for the live streaming with the image quality being far superior to other systems. Furthermore, it is possible to use voice calls even during filming, and it is also possible to record consultation videos. The scalability in which simultaneous connection of up to 12 STC-Cams can be connected was highly valued among stakeholders. Also, even if the rendezvous point where the doctor helicopter lands (temporary heliport) had poor mobile reception area, the flexibility to use a satellite mobile phone has also become valuable.



Smart-telecaster adoption was officially selected as their supplier. The Asahikawa Red Cross Hospital, began with fixing STC - Cam to the chests of the flight suits worn by the flight doctor and nurses. These broadcast in high-quality images and clearly show what the doctors and nurses on the scene can see. We had devised a live-streaming body camera, so that the flight doctor and nurse could freely use both hands to tend to the patient. *"Since STC - Cam can broadcast not only the injured patients but also the electrocardiographs monitors and ultrasound diagnostic equipment installed in doctor helicopters, the remote MC Dr can also accurately grasp the patient's real-time medical condition."* Mr Sumida concurred, *"It is possible to give accurate instructions."*

Meanwhile, the consultation side Smart-telecaster base station "STC-MultiView" was installed on a small laptop PC, which was small enough to operate efficiently in the limited space of the doctor's helicopter. It was said that its compact size was one of the deciding factors.

Real-time medical treatment with the new broadcasting tools were able to stabilise the patient's condition quicker and delivered expected treatment improvements

The Asahikawa Red Cross Hospital became the first critical care centre in the region of Hokkaido and Tohoku, which introduced a real-time video relay system with doctor's helicopters. By introducing the Smart-telecaster into their emergency medical procedures, Mr Sumida forecasts that real-time effect of medical treatment delivered between the remote locations and the base hospital improve the stabilizing of the patient's condition. *"Even in Hokkaido alone, accidents involving numerous serious injuries and injuries occur 30 to 40 times a year. As the situation can be accurately grasped on the site with the video, the hospital can promptly declare the right disaster response level. It is an effective way to judge how we should best prepare and setup."*

The Smart-telecaster is easy to use and easy to start using, just by installing an application on a smartphone or recording device. *"If this is used in more life-saving and emergency situations, it will be possible to improve the survival rate of patients and reduce longer term after-effects."*

Mr. Sumida prepared the information sharing system using smart-telecaster with the firefighting institutions and medical institutions under the jurisdiction of the northern medicine area. He even linked communications with regional health related organizations other than North Japan. The wider communication will assist emergency medical care if there is a wide area disaster or terrorist disaster (whether it's a nuclear, biological, chemical occurrence).

"Operation of Smart-telecaster is just beginning, but we will continue to devise ways to develop into an information system important for life-saving medical care in Hokkaido, while obtaining advice and expert advice from Soliton Systems." Mr. Sumida speaking. *"I have great expectations for future of the synergistic effect with our medical helicopters."*